

Applic. No. 10/014,265

Amdt. dated August 4, 2005

Reply to Office action of May 4, 2005

Remarks/Arguments:

Reconsideration of the application is requested.

Claims 1-39 remain in the application.

In item 1 on page 2 of the above-identified Office action, the specification has been objected to because of the following alleged informalities.

More specifically, the Examiner stated that on page 4, lines 10-12 it is unclear what is intended by "...smaller than ...by at least a factor of 0.6." The Examiner stated that the statement is not consistent with the formula in line 21.

Applicants respectfully disagree with the Examiner. The equation $V < 0.6H$ has the exact same meaning as the sentence that "the catalytic converter has at least one honeycomb body with a total volume V smaller than the displacement H by at least a factor of 0.6." The definition of factor from the Webster's Third New International Dictionary is: any of the numbers, quantities, or symbols in mathematics that when multiplied together form a product. Accordingly, the volume V is smaller (less than) the displacement by at least a factor of 0.6 which indicates that the volume would also be smaller

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than the displacement by a factor of 0.61, 0.62, etc. (or at least 0.6). This is further reinforced by the equation on line 21. Furthermore, it is unclear what the Examiner intends with the statement "values from 0.6 to indefinite". Applicants request clarification of what the Examiner intends with the term "indefinite", as indefinite does not appear to be a mathematical term that is related to the equation.

The Examiner stated that it is unclear what "total volume" implies. The specification calls for "a honeycomb body with a total volume". Therefore, the total volume is that of the honeycomb body.

In item 6 on page 3 of the above-identified Office action, claims 1-39 have been rejected as being indefinite under 35 U.S.C. § 112.

More specifically, the Examiner has stated that it is unclear as to what structural limitation applicants are attempting to recite.

Applicants respectfully disagree with the Examiner. The claim language in claim 1 that "one honeycomb body with a total volume smaller than said displacement by at least a factor of 0.6" is believed to be consistent with the formula on page 4,

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line 21 of the specification that $V < 0.6H$. As explained above, with respect to the specification the language is believed to be clear. Furthermore, a person of skill in the art can fully understand that the volume of the honeycomb body is at least 0.6 times smaller than the displacement of the engine. Accordingly, the claim is believed to be definite. Therefore, the claims have not been amended to overcome the rejection of claims 1-39.

It is accordingly believed that the specification and the claims meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved.

In item 7 on page 3 of the Office action, claims 1-2, 13-21, and 32-39 have been rejected as being obvious over Abe et al. (U.S. Patent No. 5,802,845) (hereinafter "Abe") in view of Machida et al. (U.S. Patent No. 5,455,012) (hereinafter "Machida") and Chalasani et al. (U.S. Patent No. 6,080,345) (hereinafter "Chalasani") under 35 U.S.C. § 103.

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and

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the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, *inter alia*:

the catalytic converter having a geometric surface dimensioned to provide the catalytic converter with an effectiveness of more than 98% for converting at least one harmful component in the exhaust gases into harmless components.

With respect to the Machida reference, the Examiner bases the rejection on Figs. 10 and 11. Fig. 10 discloses HC purification efficiencies dependent on the partition wall thickness of a catalytic substrate in the first exhaust converter. Fig. 11 discloses HC purification efficiencies depending on the cell density of the catalytic substrate of the first exhaust converter. The highest efficiencies disclosed in Figs. 10 and 11 are below 90% HC purification efficiency. All other efficiencies that are disclosed in Figs. 4, 5, 6, 7, and 9 are well below 90% as well. Even if the efficiency curves in Figs 10 and 11 were extrapolated, the efficiency would never reach a value of 98% or greater.

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Contrary thereto, the behavior of the curves shown is asymptotic with respect to a value of about 91 to 92%.

It is a requirement for a *prima facie* case of obviousness, that the prior art references must teach or suggest all the claim limitations.

The references do not show or suggest the catalytic converter having a geometric surface dimensioned to provide the catalytic converter with an effectiveness of more than 98% for converting at least one harmful component in the exhaust gases into harmless components, as recited in claim 1 of the instant application.

A combination of the Abe of and Machida does not disclose an efficiency of 98%. Even if a person of ordinary skill in the art would extrapolate the efficiency curves disclosed in Machida, an efficiency of only 91 to 92% is achieved. This is a very large difference compared to the 98% efficiency of the instant application. Therefore, the references do not show or suggest a 98% efficiency. This is contrary to the invention of the instant application as claimed, in which the catalytic converter has a geometric surface dimensioned to provide the catalytic converter with an effectiveness of more than 98% for

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converting at least one harmful component in the exhaust gases into harmless components.

Chalasani does not make up for the deficiencies of Abe and Machida with respect to the above-noted features.

The Chalasani reference does not disclose any efficiencies.

Chalasani does not disclose any volumes of honeycomb bodies with respect to the displacement of a combustion engine.

Chalasani discloses a method for forming and shaping a honeycomb body which is stiffer in than usual honeycomb bodies. Therefore, Chalasani does not make up for the deficiencies of Abe and Machida. Furthermore, when a person of ordinary skill in the art would not be motivated to use the teaching of Chalasani when trying to improve the conversion efficiency of the honeycomb body disclosed in Abe.

The references applied by the Examiner do not teach or suggest all the claim limitations. Therefore, it is believed that the Examiner has not produced a *prima facie* case of obviousness.

Since claim 1 is believed to be allowable, dependent claims 2, 13-21, and 32-39 are believed to be allowable as well.

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In item 8 on page 5 of the Office action, claims 3-12 and 22-31 have been rejected as being obvious over Abe (U.S. Patent No. 5,802,845) in view of Machida (U.S. Patent No. 5,455,012) (hereinafter "Machida") and Chalasani (U.S. Patent No. 6,080,345) and further in view of Ootani et al. (WO 98/51410) (hereinafter "Ootani") under 35 U.S.C. § 103. Ootani does not make up for the deficiencies of Abe, Machida, and Chalasani. Since claim 1 is believed to be allowable, dependent claims 3-12 and 22-31 are believed to be allowable as well.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-39 are solicited.

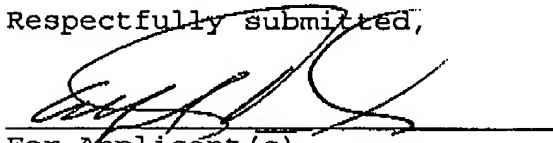
In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

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If an extension of time for this paper is required, petition
for extension is herewith made.

Please charge any other fees which might be due with respect
to Sections 1.16 and 1.17 to the Deposit Account of Lerner &
Greenberg P.A., No. 12-1099.

Respectfully submitted,


For Applicant(s)

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